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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/001,994	12/05/2001	Ilyeong-Gon Noh	1568.1032	2829

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EXAMINER	
CANTELMO, GREGG	
ART UNIT	**PAPER NUMBER**
1745	

DATE MAILED: 03/26/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/001,994	NOH ET AL.	
	Examiner	Art Unit	
	Gregg Cantelmo	1745	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *07 January 2004*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-24* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-24* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Response to Amendment

1. In response to the amendment received January 7, 2004:

   a. The 103 rejections are withdrawn;

   b. The obviousness-type double patenting rejections stand.

Double Patenting

1. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970);and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

2. Claims 1-15, 17-20 and 22-23 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims of U.S. Patent No. 6632,571 (Noh). Although the conflicting claims are not identical, they are not patentably distinct from each other.

Noh claims a polymer gel electrolyte, method of making a polymer gel electrolyte, lithium battery and method of making a lithium battery comprising the claimed polymer has the same monomer constituents in the same mole ratios (formulas 1-3) as recited in

the terpolymer of claims 1, 10, 17 and 23, a lithium salt and non-aqueous organic solvent (see Noh, claims 1, 7, 8, 16, 23, 37 and 38 as applied to claims 1, 10, 17 and 23).

The molar ratios of the constituents as defined in the claims arrives at a polymer molecular weight within the range of claims 2 and 16 (claim 10 as applied to claims 2, 11 and 16).

The cross-linking argent is N,N-(1,4-phenylene)bismaleimide (claims 5, 23, 35 and 45 as applied to claims (3, 4, 8, 12, 13, and 18).

The non-aqueous solvent genus has overlapping solvents in the same part by weight (claims 1, 6, 7, 14, 16, 32 and 37 as applied to claims 5, 6, 14 and 15).

The claimed method polymerizes the constituents at an overlapping range (claim 26, 36 and 48 as applied to claims 9 and 19).

The electrolyte precursor is proved on a resin separator and polymerized (claims 16 and 31 as applied to claim 20).

A polymerization starter and catalyst are provide to facilitate crosslinking (claims 21 and 22 as applied to claim 22).

The difference between instant claims 1, 10 17 and 23 and Noh is that Noh does not show the linking of the polymer formulas 1-3 in the manner shown in the instant claims.

The monomers will crosslink with each other during polymerization and at least a portion of the polymerized constituents will have the same structural formula as that shown in the instant claims (with respect to formula 1).

Therefore it would have been obvious to one of ordinary skill in the art at the time the claimed invention was made that the claimed invention of Noh would obviously result in the same product and process steps set forth in the instant application and as such are obvious variants.

3. Claim 16 is rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-48 of Noh as applied to claim 10 above and in further view of U.S. patent No. 5,579,659 (Morigaki) or Sogo.

The teachings of claim 10 with respect to Noh have been discussed above and are incorporated herein.

Noh claims a polyethylene insulating resin sheet (claim 31).

The difference not yet discussed is of the resin sheet having a particular porosity and thickness.

Morigaki discloses that a microporous polyethylene membrane having a porosity of 60%, and thickness is 20-22 microns (see Example 2).

Sugo discloses a similar separator as discussed above and incorporated herein.

Selection of the porosity and thickness therein provides a separator having both excellent conductivity due to the optimal thickness and porosity while having sufficient mechanical strength.

Therefore it would have been obvious to one of ordinary skill in the art at the time the claimed invention was made to modify the teachings of Noh by selecting the separator to be a resin sheet having a porosity of 60% and a thickness of 20-22 microns

since it would have provided a separator having both excellent conductivity due to the optimal thickness and porosity while having sufficient mechanical strength.

4. Claim 21 is rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-48 of Noh as applied to claim 7 above and in further view of JP '940.

The teachings of claim 7 with respect to Noh have been discussed above and are incorporated herein.

The difference not yet discussed is of forming the polymer on a support and then peeling the polymer film from the support film.

JP '940 teaches that it is known in the art to form the polymer on release paper, attach the electrolyte to the electrode and remove the release paper from the electrolyte (paragraph [0030]-[0031]).

The motivation for using this process is to uniformly imprint the solid-polymer-electrolyte on the electrode.

Therefore it would have been obvious to one of ordinary skill in the art at the time the claimed invention was made to modify the teachings of Noh by forming the polymer on a support and then peeling the polymer film from the support film since it would have provided a means for uniformly imprinting the electrolyte on the electrode.

Response to Arguments

5. Applicant does not present any arguments to the aforementioned rejection. Therefore the rejection stands.

Conclusion

6. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

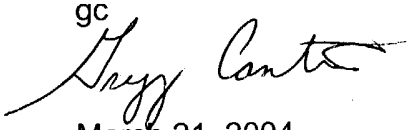
A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Gregg Cantelmo whose telephone number is (571) 272-1283. The examiner can normally be reached on Monday to Thursday from 9 a.m. to 6 p.m. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Pat Ryan, can be reached on (571) 272-1292. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306. FAXES received after 4 p.m. will not be processed until the following business day. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status

information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Gregg Cantelmo
Primary Examiner
Art Unit 1745

gc



March 21, 2004